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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,351	03/24/2004	Akihito Kusano	1033498-000024	5379

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BUCHANAN, INGERSOLL & ROONEY PC  
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EXAMINER

BURCH, MELODY M

ART UNIT	PAPER NUMBER
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3683

MAIL DATE	DELIVERY MODE
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05/02/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/807,351

Applicant(s)

KUSANO ET AL.

Examiner

Melody M. Burch

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 7-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

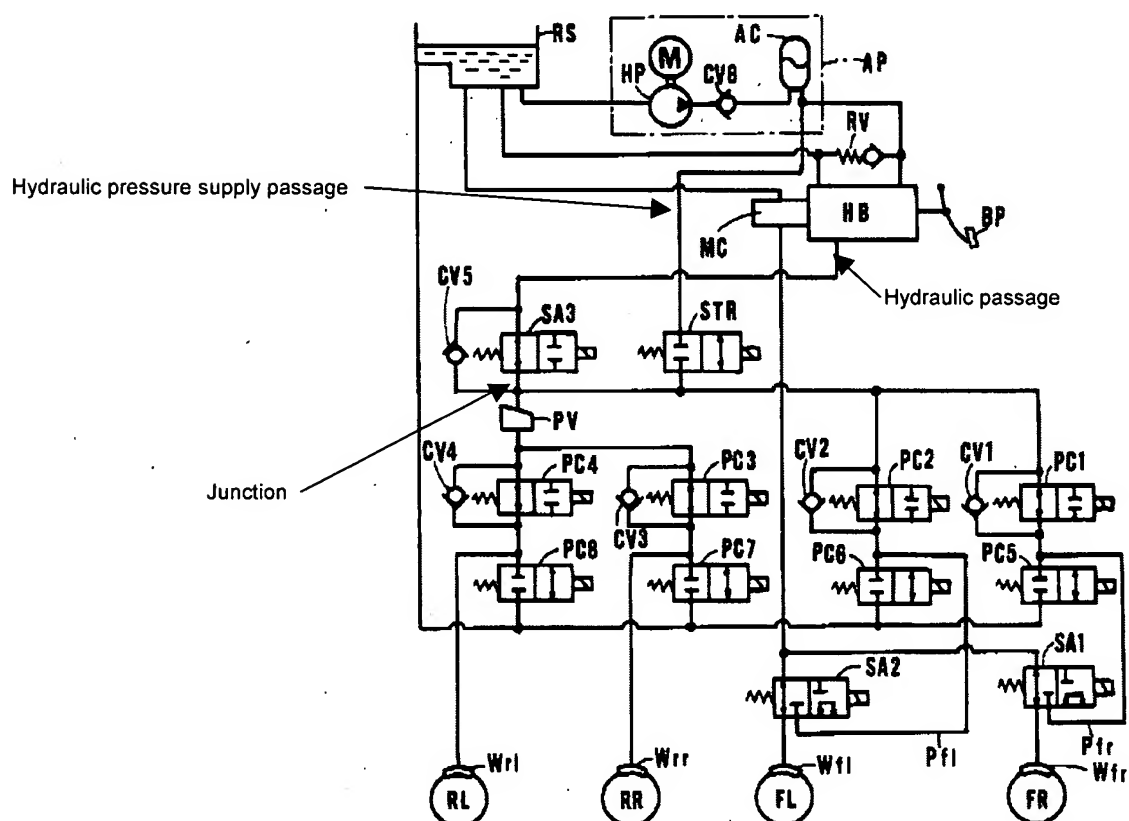
### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |



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Re: claim 1. Tozu et al. show in figure 3 a vehicle hydraulic brake device comprising a hydraulic pressure source AP for generating and outputting a predetermined hydraulic pressure, a pressure adjusting valve HB,MC including a pressure adjusting mechanism for adjusting the output hydraulic pressure of the hydraulic pressure source to a value corresponding to a brake operating amount and wheel cylinders Wrl-Wfr actuated by the output hydraulic pressure of the pressure adjusting valve for imparting braking force to wheels of the vehicle, further comprising a hydraulic passage as labeled, a hydraulic pressure supply passage as labeled for supplying hydraulic pressure from the hydraulic pressure source to the hydraulic passage at a junction therewith, the hydraulic pressure supply passage by-passing the pressure adjusting mechanism of the pressure adjusting valve as shown, a first solenoid valve STR provided in the hydraulic pressure supply passage for reducing the output hydraulic pressure of the hydraulic pressure source and supplying it to the hydraulic passage leading from the pressure adjusting valve to the wheel cylinders, a second solenoid valve SA3 provided in the hydraulic passage at a location between the pressure adjusting valve and the junction and operable for reducing the output hydraulic pressure supplied from the hydraulic pressure supply passage, a check valve CV5 provided parallel to the second solenoid valve and allowing fluid flow from the pressure adjusting valve toward the hydraulic pressure supply passage and a controller ECU for controlling operations of the first and second solenoid valves, wherein control of the hydraulic pressure supplied to the wheel cylinders during automatic brake control is performed by operating the first solenoid valve to increase the hydraulic pressure in the

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wheel cylinders as disclosed in col. 8 lines 36-50 and by operating the second valve to decrease the hydraulic pressure in the wheel cylinders as disclosed in col. 7 lines 48-53 and col. 7 line 66 – col. 8 line 2, and wherein when the output hydraulic pressure of the pressure adjusting valve exceeds the hydraulic pressure in the wheel cylinders in response to operation of the brake operating member during the automatic brake control, the output hydraulic pressure of the pressure adjusting valve is supplied into the wheel cylinders through the check valve as disclosed in col. 8 lines 5-10.

Tozu et al. are silent with regards to the first and second solenoid valves being proportional valves or specifically of the type in which a differential pressure between upstream hydraulic pressure and downstream hydraulic pressure thereof is controllable to a value corresponding to a control current applied thereto.

Peterson teaches in col. 19 lines 52-60 and in figure 17g the use of substituting a proportional valve 788 in place of a two-way solenoid valve 778,780.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the two-way or two-position solenoid valves of Tozu et al. to have included proportional valves, as taught by Peterson, in order to provide a means of controlling the degree of opening of the valve to achieve a desired pressure differential.

Re: claims 2 and 3. See the rejection of claim 1 and, as shown in figure 3 of Tozu et al., a pressure chamber within the element labeled HB, a master cylinder MC inherently including a master piston actuated by the output pressure of the pressure adjusting valve introduced into the pressure chamber since, as broadly claimed, the

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hydraulic pressure of the pressure adjusting valve is circulated throughout the brake device, a solenoid valve PC3 for supplying the output hydraulic pressure of the pressure adjusting valve to a hydraulic system leading from the master cylinder to the wheel cylinder Wrr, a hydraulic pressure supply passage as set forth above connected to a hydraulic passage as set forth above connecting the pressure adjusting valve to the solenoid valve. The hydraulic pressure source includes a power driven pump HP for producing hydraulic pressure and a pressure accumulator AC for accumulating hydraulic pressure produced by the pump.

3. Claims 4, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tozu et al. in view of Peterson as applied to claims 1-3 above, and further in view of US Patent 6422662 to Haas.

Tozu et al., as modified, lack the limitation of the means for detecting that the output hydraulic pressure of the pressure adjusting valve has become equal to the hydraulic pressure of the hydraulic pressure supply passage, and wherein when it is detected by the means that the output hydraulic pressure of the pressure adjusting valve has become equal to the hydraulic pressure of the hydraulic pressure supply passage, automatic brake control is stopped.

Haas teaches in the abstract, in col. 4 lines 24-44, and in figure 1 the use of a brake device in which a means 107,108,110 for detecting that the output hydraulic pressure of above valve 113 has become equal to the hydraulic pressure of the hydraulic pressure supply passage or the area below valve 113, and wherein when it is detected by the means that the output hydraulic pressure of the pressure adjusting

valve has become equal to the hydraulic pressure of the hydraulic pressure supply passage or when the pressure at the wheel cylinders is higher than the hydraulic , automatic brake control is stopped.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the device of Tozu et al., as modified, to have included means for detecting and comparing the hydraulic pressures, as taught by Haas, in order to provide a means of determining when to trigger pump activation.

#### ***Response to Arguments***

4. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 6957871 to Maki teaches the invention substantially as set forth above, but lacks the limitation of the hydraulic pressure supply passage bypassing the pressure adjusting mechanism of the pressure adjusting valve.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 571-272-7114. The examiner can normally be reached on Monday-Friday (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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mmb

April 27, 2007

*Melody M. Burch*  
**Melody M. Burch**  
**Primary Examiner**  
**Art Unit 3683**  
4/27/07